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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,893	01/11/2001	Jin Li	2000.047800	8422

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George J Oehling Patent Agent
Williams Morgan & Amerson PC
Suite 250 7676 Hillmont
Houston, TX 77040

EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 11/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/758,893

Applicant(s)

LI, JIN

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9-24, 26-31, and 33-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Eames (US Patent 6,078,593).

Claim 1 is limited to **a method to reduce false switch hook detection in a line card coupled to a subscriber loop, comprising: operating in a first state of the line card**; Eames discloses a line card that contains states and operates in any number of first states (figures 11 and 12 and column 24, line 3-column 30, line 29). **Receiving a control signal**; Eames discloses a control signal that causes a transfer between states (tables 7-18 and figure 16, element RING_EN*). **Disabling switch hook detection in the line card**; Eames discloses a loop detector (i.e. switch hook detection) that is active only in certain states (i.e. disabled) (table 2, and column 11, lines 14-21). **Determining an initial condition of a second state of the line card**; Eames discloses states with certain operating conditions (i.e. determining an initial condition) that are activated upon switching to a second state (column 24, lines 3-17). **Operating in the second state of the line card in response to receiving the control signal**; Eames discloses changing

states upon receiving the appropriate control signal (figure 11). **Wherein the second state begins to operate from the determined initial condition**; Eames discloses operating in a state based on its line parameters (column 24, lines 3-17). **Activating the switch hook detection in the line card**; Eames discloses a loop detector (i.e. switch hook detection) that is active only in certain states (table 2, and column 11, lines 14-21). Therefore, Eames discloses all limitations of the claim.

Claim 2 is limited to **the method of claim 1**, as covered by Eames, **further including providing a ringing signal to the subscriber loop**; Eames discloses providing a ringing voltage to a subscriber loop (column 7, lines 46-54). Therefore, Eames discloses all limitations of the claim.

Claim 3 is limited to **the method of claim 2**, as covered by Eames, **wherein the ringing signal is provided in response to the ringing signal crossing a voltage at a ring and tip ring terminal of the line card**; Eames discloses applying a ringing voltage at a zero-voltage cross (column 13, lines 13-21). Therefore, Eames discloses all limitations of the claim.

Claim 4 is limited to **the method of claim 2**, as covered by Eames, **wherein receiving the control signal comprises receiving a ringing control signal**; Eames discloses a ringing control signal (figure 16, element RING_EN* and figure 11, element RNG). Therefore, Eames discloses all limitations of the claim.

Claim 5 is limited to **the method of claim 4**, as covered by Eames, **wherein operating in the first state comprises operating in at least one of a standby state and an active state of the line card**; Eames discloses operating in either an on-hook

(i.e. standby) or off-hook state (i.e. active) (figures 11 and 12 and column 24, line 2-column 30, line 29). Therefore, Eames discloses all limitations of the claim.

Claim 6 is limited to **the method of claim 5**, as covered by Eames, **wherein determining the initial condition of the second state includes determining an initial condition of the ringing state of the line card**; Eames discloses state variables for the ringing state (column 24, lines 3-17 and table 15). Therefore, Eames discloses all limitations of the claim.

Claim 7 is limited to **the method of claim 6**, as covered by Eames, **wherein determining the initial condition of the second state comprises determining the initial condition based on a ratio of a full scale current value in the first state and a full scale current value in the second state**; Eames discloses providing a constant current feed (i.e. full scale current) (column 10, line 65-column 11, 1) where currents from one state to another are inherently determined by a ratio. Therefore, Eames discloses all limitations of the claim.

Claim 9 is limited to **the method of claim 1**, as covered by Eames, **wherein receiving the control signal comprises receiving a control signal to stop ringing providing that ring trip has not occurred**; Eames discloses a ring release state where the ringing voltage is signaled (i.e. receiving a control signal) to stop ringing and a ring silent state that disables further ringing if the caller hangs up (i.e. ring trip has not occurred) (column 25, lines 1-25). Therefore, Eames discloses all limitations of the claim.

Claim 10 is limited to **the method of claim 9**, as covered by Eames, **wherein operating in the first state comprises operating in a ringing state of the line card**; Eames discloses operating in a ringing state of a card (figures 11 and 12 and column 24, lines 65-67). Therefore, Eames discloses all limitations of the claim.

Claim 11 is limited to **the method of claim 10**, as covered by Eames, **wherein operating in the second state comprises operating in at least one of a standby and an active state of the line card**; Eames discloses operating in a standby or off-hook (i.e. active) state (figures 11 and 12 and column 24, lines 44-64). Therefore, Eames discloses all limitations of the claim.

Claim 12 is limited to **the method of claim 11**, as covered by Eames, **wherein determining an initial condition of the second state of the line card comprises setting the initial condition to a value less than a switch hook threshold**; Eames discloses a constant current source (column 10, line 65-column 11, line 1) that inherently sets the current to a value lower than a switch hook threshold when transitioning to an on-hook state. Therefore, Eames discloses all limitations of the claim.

Claim 13 is limited to **the method of claim 12**, as covered by Eames, **wherein the second state begins to operate from the determined initial condition includes adjusting a current to the subscriber loop**; Eames discloses a constant current source that regulates the current for all states (column 10, line 65-column 11, line 1). Therefore, Eames discloses all limitations of the claim.

Claim 14 is limited to **the method of claim 1**, as covered by Eames, **wherein receiving the control signal further comprises receiving a ring trip detection signal to stop ringing**; Eames discloses a ring release state where the ring generator is signaled (i.e. receives control signal) to remove ringing voltage from the line based on a ring trip (column 25, lines 1-15). Therefore, Eames discloses all limitations of the claim.

Claim 15 is limited to **the method of claim 1**, as covered by Eames, **wherein operating in the first state of the line card further comprises operating in a ringing state of the line card**; Eames discloses operating in a ringing state of a card (figures 11 and 12 and column 24, lines 65-67). Therefore, Eames discloses all limitations of the claim.

Claim 16 is limited to **the method of claim 1**, as covered by Eames, **wherein operating in the second state of the line card further comprises operating in an active state of the line card** Eames discloses operating in an off-hook (i.e. active) state (figures 11 and 12 and column 24, lines 44-64). Therefore, Eames discloses all limitations of the claim.

Claim 17 is limited to **the method of claim 1**, as covered by Eames, **wherein determining an initial condition of the second state of the line card further comprises setting the initial condition to a value larger than a switch hook threshold**; Eames discloses a constant current source (column 10, line 65-column 11, line 1) that inherently sets the current to a value higher than a switch hook threshold

when transitioning to an off-hook state. Therefore, Eames discloses all limitations of the claim.

Claim 18 is limited to **the method of claim 1**, as covered by Eames, **wherein the second state begins to operate from the determined initial condition includes adjusting a current to the subscriber loop**; Eames discloses a constant current source (column 10, line 65-column 11, line 1) that adjusts the current to the subscriber loop after every state transition. Therefore, Eames discloses all limitations of the claim.

Claims 19-24 and 26-30 are essentially the same as claims 1, 2, and 4-7, 9-13, respectively, and are rejected for the same reasons.

Claims 31, 33, 34, and 35 are essentially the same as claims 1, 2, 4, and 11, respectively, and are rejected for the same reasons.

Claim 36 is essentially the same as claim 1 and is rejected for the same reasons.

Claim 37 is essentially the same as claim 1, as covered by Eames, with the further limitation of **determining if a ring trip occurs**; Eames discloses a ring trip detector (column 11, lines 14-21, table 2, and column 12, lines 5-16) Therefore, Eames discloses all limitations of the claim.

Claim 38 is essentially the same as claim 37 and is rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eames in view of Skidanenko et al. (US Patent 4,511,763).

Claim 8 is limited to **the method of claim 1**, as covered by Eames. Eames discloses a constant current battery feed (Eames, column 10, line 65-column 11, line 1). Therefore, Eames discloses all limitations of the claim with the exception of **further comprising storing a voltage between a ring and tip terminal of the line card**; Skidanenko teaches providing a controlled current power supply using a capacitor (Skidanenko, figure 1, element 26) to store voltage across the tip and ring line (column 3, line 59-column 4, line 23), and where the controlled current sources eliminates the need of high voltages for longer subscriber lines used in constant current power supplies (column 2, line 63-column 3, line 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the constant current power source of Eames with the controlled current power source as taught by Skidanenko for the purpose of eliminating the need for high voltages in longer subscriber loops.

Claim 25 is essentially the same as claim 8 and is rejected for the same reasons.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eames in view of Chen et al. (US Patent 6,301,358).

Claim 32 is limited to **the line card of claim 31**, as covered by Eames. Therefore, Eames has been shown to disclose all limitation of the claim with the exception of **wherein the subscriber line interface circuit is a voltage-feed subscriber line interface circuit**; Eames discloses a constant current battery feed with

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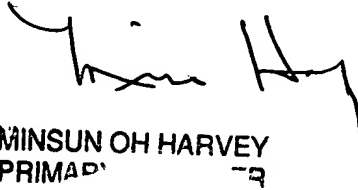
two power supplies (Eames, column 10, line 65-column 11, line 1 and column 11, lines 45-53), but does not describe the internal mechanism used to generate the constant current output. Chen teaches to implement a constant current battery feed with a voltage-feed current-sense architecture for the purpose of reducing the power dissipated by a dual-supply line-interface circuit (column 1, line 26-column 3, line 36) like that of Eames (column 11, lines 43-53). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the constant current battery feed as taught by Eames using the constant current source employing voltage-feed for the purpose of reducing the power dissipated by the dual-supply line-interface circuit of Eames.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.


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